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     FILE 'REGISTRY' ENTERED AT 12:54:07 ON 13 DEC 95
L1                STR
L2             50 S L1
L3                STR L1
L4             50 S L3
L5                STR L3
L6             50 S L5
L7           2724 S L5 FUL

     FILE 'CAPLUS' ENTERED AT 12:57:59 ON 13 DEC 95
L8           8001 S L7
L9            319 S HYPERPHOSPHATEM?
L10             0 S HYPER PHOSPHATEM?
L11            43 S L8 AND L9
L12            23 S L8(L)L9

=>
=> d que stat l8
L5                STR
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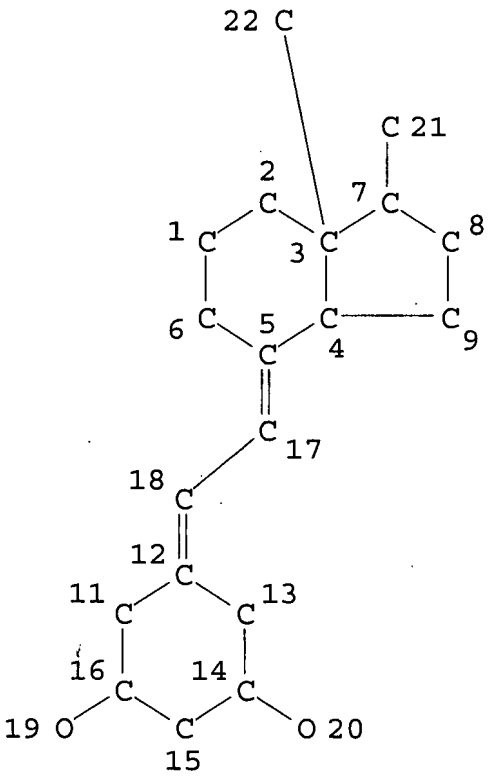


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L8          8001 SEA FILE=CAPLUS L7

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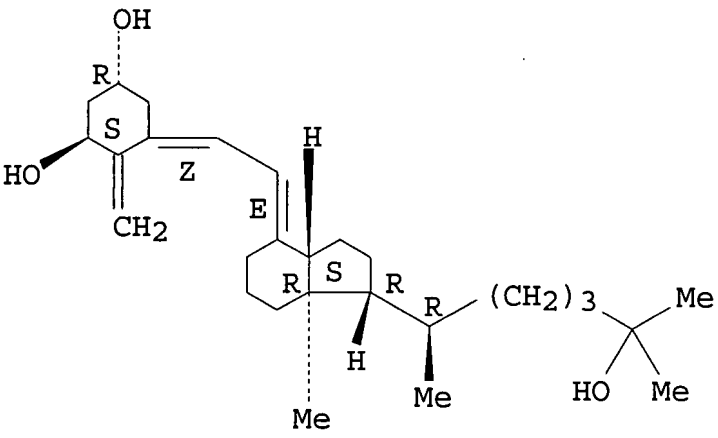
     (FILE 'CAPLUS' ENTERED AT 12:57:59 ON 13 DEC 95)
L9           319 S HYPERPHOSPHATEM?
L10            0 S HYPER PHOSPHATEM?
L11           43 S L8 AND L9
L12           23 S L8(L)L9

=> d bib abs hitstr

L12  ANSWER 1 OF 23  CAPLUS  COPYRIGHT 1995 ACS
AN   1993:78624  CAPLUS
DN   118:78624
TI   Chronic respiratory alkalosis induces renal PTH-resistance,
     hyperphosphatemia and hypocalcemia in humans
AU   Krapf, Reto; Jaeger, Philippe; Hulter, Henry N.
CS   Dep. Med., Insel Univ. Hosp., Bern, Switz.
SO   Kidney Int. (1992), 42(3), 727-34
     CODEN: KDYIA5; ISSN: 0085-2538
DT   Journal
LA   English
AB   Chronic respiratory alkalosis induces renal hyperphosphatemia and
     hypocalcemia in humans. The effects of chronic respiratory
     alkalosis on divalent ion homeostasis have not been reported in any
     species. The authors studied four normal male subjects during a
     four-day control period (residence at 500 m), during six days of
     chronic respiratory alkalosis induced by hypobaric hypoxia
     (residence at 3450 m), followed by a six-day eucapnic recovery
     period (500 m) under metabolic balance conditions. Chronic
     respiratory alkalosis (.DELTA.PaCO2, -8.4 mm Hg, .DELTA.[H+] - 3.2
     nmol/L) resulted in a sustained decrement in plasma ionized calcium
     concn. (.DELTA.[IoCa++]p, -0.10 mmol/L), and a sustained increment
     in plasma phosphate concn. (.DELTA.[PO4]p, +0.14 mmol/L,) assocd.
     with increased fractional excretion of Ca++ (+0.5%), decreased
     phosphate clearance (-6.1 mL/min) and decreased excretion of
     nephrogenous cAMP (-1.5 nmol/100 mL GFR). Urinary phosphate
     excretion decreased by 15.4 mmol/24 h on day 1 of chronic
     respiratory alkalosis, but returned to control values by day 6
     despite hyperphosphatemia. Serum intact [PTH] did not change.
     Sustained hypomagnesuria (-0.8 mmol/24 h) occurred during chronic
     respiratory alkalosis and was accounted for, at least in part, by
     decreased fractional excretion of Mg++ (-0.7%) in the absence of
     change in plasma magnesium concn. Serum 1,25(OH)2D levels were
     unchanged by chronic respiratory alkalosis. In conclusion, the
     decrease in nephrogenous cAMP generation despite unchanged serum
     intact PTH concn. suggests that chronic respiratory alkalosis
     results in impaired renal responsiveness to PTH as manifested by
     alterations in PTH-dependent renal calcium and phosphate transport.
     Hypomagnesuria in chronic respiratory alkalosis may be due, at least
     in part, to hypocalcemia-induced enhancement of renal magnesium
     reabsorption. The failure of [PTH] to increase during hypocalcemia
     may reflect defective PTH secretion.
IT   32222-06-3, 1,25-Dihydroxycholecalciferol
     RL: BPR (Biological process); BIOL (Biological study); PROC
     (Process)
```

(metab. of, in human respiratory alkalosis, **hyperphosphatemia** and hypocalcemia in relation to)
RN 32222-06-3 CAPLUS
CN 9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, (1.alpha.,3.beta.,5Z,7E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



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L12 ANSWER 2 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1987:175021 CAPLUS
DN 106:175021
TI Effects of vitamin D deficiency in the chicken embryo
AU Narbaitz, R.; Tsang, C. P. W.; Grunder, A. A.
CS Dep. Anat., Univ. Ottawa, Ottawa, ON, Can.
SO Calcif. Tissue Int. (1987), 40(2), 109-13
CODEN: CTINDZ; ISSN: 0171-967X
DT Journal
LA English
AB Vitamin D [1406-16-2]-deficient chicken embryos were obtained by feeding laying hens a diet in which 5 .mu.g 1,25(OH)2D3 [**32222-06-3**]/kg feed replaced the vitamin D3 supplement in the control diet. Hatchability, total Ca and inorg. P concn. in blood, and tibial ash/dry wt. ratio were detd. in the vitamin D-deficient embryos and in embryos obtained from hens fed the control diet supplemented with 1100 IU vitamin D3/kg feed. After 5 wk on the substituted diet the hens laid eggs that had decreased hatchability in spite of excellent shell quality. All detns. in blood and bones were made on embryos of eggs laid after 6-12 wk on the diets. On the 17th day of incubation the embryos derived from hens fed the substituted diet had significant hypocalcemia and **hyperphosphatemia** and a lowtibial ash/dry wt. ratio. Injection of 1,25(OH)2D3 3 days before killing cor. the hypocalcemia of the deficient embryos. Those chicks that managed to hatch had normal levels of Ca and inorg. phosphate 1 day after hatching. These findings support previous suggestions that vitamin D metabolites are required by the embryo in order to mobilize Ca from the shell, and that decreased hatchability in vitamin D-deficient embryos is related to a defect in Ca mobilization from the shell.

=> d bib abs hitstr 3

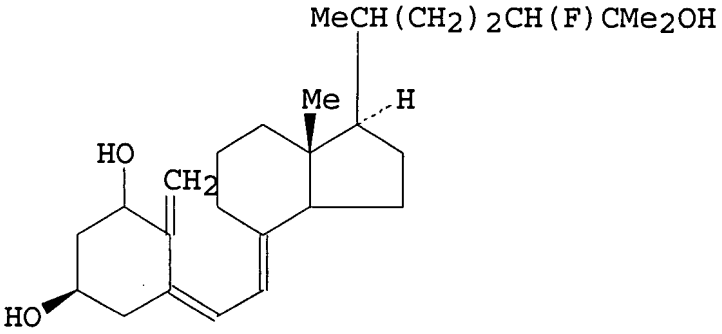
L12 ANSWER 3 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1987:132353 CAPLUS
DN 106:132353
TI Effect of 1,25-dihydroxyvitamin D3 and 24,25-dihydroxyvitamin D3 on homeostasis of calcium and bone tissue in hypokinesia
AU Sergeev, I. N.; Blazheevich, N. V.; Kaplanskii, A. S.; Shvets, V. N.; Belakovskii, M. S.; Spirichev, V. B.
CS Inst. Nutrit., Moscow, USSR
SO Vopr. Med. Khim. (1987), 33(1), 100-7, 1 plate
CODEN: VMDKAM; ISSN: 0042-8809
DT Journal
LA Russian
AB Daily prophylactic administration of the active vitamin D3 metabolites 1,25-dihydroxyvitamin D3 (I) [**32222-06-3**] (0.03 or 0.15 .mu.g) and(or) 24,25-dihydroxyvitamin D3 (II) [40013-87-4] (0.25 or 1.25 .mu.g) to growing rats subjected to prolonged hypokinesia normalized Ca2+ metab. and the state of bone tissue dependent on the dose and combination. I at 0.03 .mu.g/day increased Ca2+ absorption by the small intestine, cor. hypocalcemia, and increased bone tissue d., the Ca and P content of bone, the vol. of spongiosa, the width of the epiphysial growth plate, and the no. of osteoclasts. The higher dose caused hypercalcemia, **hyperphosphatemia**, bone tissue resorption, an increase in the osteoclast content and ectopic calcification. I at 0.03 .mu.g/day combined with either dose of II or II at the higher dose alone restored Ca2+ absorption by the intestine and blood Ca2+ levels and normalized bone mineral compn., d., and spongiosa vol. Epiphysial growth width and osteoclast count remained decreased. The synergistic effect of I and II depended on their various functions in the regulation of Ca2+ metab. and in development and remodeling of bone. Thus, these vitamin D3 metabolites should be simultaneously for prophylactic purposes in conditions of hypokinesia such as during space flights.

=> d bib abs hitstr 4

L12 ANSWER 4 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1987:114244 CAPLUS
DN 106:114244
TI 1,25-Dihydroxycholecalciferol regulates salivary phosphate secretion in cattle
AU Riad, F.; Lefaivre, J.; Barlet, J. P.
CS INRA Theix, Ceyrat, F-63122, Fr.
SO J. Endocrinol. (1987), 112(3), 427-30
CODEN: JOENAK; ISSN: 0022-0795
DT Journal
LA English
AB The influence of 1,25-dihydroxycholecalciferol [1,25-(OH)2D3] [**32222-06-3**] on salivary inorg. P (Pi) concn. and secretion was studied in 2 groups of heifers, the right parotid ducts of which were chronically fitted with a re-entrant cannula. In some heifers, i.v. Pi loading (5 mmol/min for 2 h) induced **hyperphosphatemia** assocd. with a decrease in plasma 1,25-(OH)2D concn. and an increase in salivary Pi concn. and secretion. In other heifers, daily 1.alpha.-hydroxycholecalciferol [**41294-56-8**] injections (1 .mu.g/kg/day for 3 days) induced **hyperphosphatemia** assocd. with an increase in plasma 1,25-(OH)2D concn. and a decrease in salivary Pi concn. and secretion. These treatments had no effect on salivary Ca concn. and secretion. Evidently, plasma 1,25-(OH)2D concns. rather than phosphatemia regulate salivary Pi concn. and secretion in cattle.

=> d bib abs hitstr 5

L12 ANSWER 5 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1987:1003 CAPLUS
DN 106:1003
TI Bone resorption, renal function and mineral status in cows treated with 1,25-dihydroxycholecalciferol and its 24-fluoro analogs
AU Goff Jesse P.; Horst, Ronald L.; Littledike, E. Travis; Boris, A.; Uskokovic, M. R.
CS Agric. Res. Serv., Natl. Anim. Dis. Cent., Ames, IA, 50010, USA
SO J. Nutr. (1986), 116(8), 1500-10
CODEN: JONUAI; ISSN: 0022-3166
DT Journal
LA English
GI



I

AB The relative potencies of 1,25-dihydroxycholecalciferol [**32511-63-0**], 24-fluoro-1,25-dihydroxycholecalciferol (I) [**90244-37-4**], and 24,24-difluoro-1,25-dihydroxycholecalciferol (II) [**94483-03-1**] at 3 doses (25, 100, or 400 .mu.g) were assessed in nonlactating Jersey cows. II induced a greater hypercalcemia and **hyperphosphatemia** than did 1,25-dihydroxycholecalciferol. I was intermediate in its hypercalcemic and **hyperphosphatemic** potency. Urinary hydroxyproline excretion rate and plasma hydroxyproline concn. were not increased by treatment with any of the compds. This indicates that these compds. did not stimulate bone resorption in nonlactating, nongravid cows. Renal function was impaired in cows that received a 400-.mu.g dose of any compd. There was a severe redn. in glomerular filtration rate (.ltoreq.42%) and urine sp. gr. Renal function was most severely affected in cows treated with II and was evident even at the 100-.mu.g dosage level.

=> d l12 bib abs hitstr 6-23

L12 ANSWER 6 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1986:584510 CAPLUS
DN 105:184510
TI Intestinal phosphate and calcium absorption: joint regulation by thyroid hormones and 1,25-dihydroxyvitamin D3
AU Cross, Heide S.; Poelzleitner, Doris; Peterlik, Meinrad
CS Med. Sch., Univ. Vienna, Vienna, A-1090, Austria
SO Acta Endocrinol. (Copenhagen) (1986), 113(1), 96-103
CODEN: ACENA7; ISSN: 0001-5598
DT Journal
LA English
AB T4 [51-48-9] and T3 [6893-02-3] activate Na+-dependent inorg. phosphate (Pi) transport in organ-cultured embryonic chick small intestine. Induction of transport activity requires intact protein synthesis and can be expressed in enterocytes with varying degrees of differentiation. T3 and T4 exert their effects independent of 1,25-dihydroxyvitamin D3 [(1,25(OH)2D3] [**32222-06-3**], which stimulates Pi uptake only in the final stage of embryonic differentiation. At this time point, a potentiating effect of 1,25(OH)2D3 and T4 on Pi transport in cultured jejunum can be demonstrated. Thyroid hormones appear to stimulate Na+ gradient-driven Pi transport without concomitantly raising (Na+-K+)-ATPase activity. T4 has no influence whatsoever on Ca2+ uptake by cultured embryonic small intestine, whereas 1,25(OH)2D3 is effective at all stages of embryonic development investigated (day 15-20). However, when both hormones were present in the culture medium, the effect of 1,25(OH)2D3 on Ca2+ transport is doubled. Apparently, the **hyperphosphatemia** assocd. with hyperthyroidism is likely to result, at least in part, from the independent effect of thyroid hormones as well as from their potentiation of the 1,25(OH)2D3 action on Na+-dependent intestinal Pi transport. In addn., their permissive effect on 1,25(H)2D3-induced Ca2+ absorption provides an explanation for unaltered Ca2+ absorption in a no. of hyperthyroid patients, although reduced plasma levels of 1,25(OH)2D3 are generally obsd. in this condition.

L12 ANSWER 7 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1986:459807 CAPLUS
DN 105:59807
TI The action of various vitamin D3 metabolites on calcium and phosphorus metabolism in chick embryo calvariae
AU Brommage, R.; Hart, L. E.; DeLuca, H. F.
CS Dep. Biochem., Univ. Wisconsin, Madison, WI, 53706, USA
SO Experientia (1986), 42(5), 553-4
CODEN: EXPEAM; ISSN: 0014-4754
DT Journal
LA English
AB Chick embryos from vitamin D [1406-16-2]-deficient hens given physiol. doses of 1,25-dihydroxyvitamin D3 [**32222-06-3**] or 24,25-dihydroxyvitamin D3 [40013-87-4] or both became severely hypocalcemic and **hyperphosphatemic** and failed to hatch as compared to those derived from hens given 25-hydroxyvitamin D3 [19356-17-3] or 24,24-difluoro-25-hydroxyvitamin D3 [71603-41-3]. Calvariae from the former contained less mineral and on incubation

in vitro produced significantly lower Ca and higher phosphate concn. in the medium than did the calvariae derived from the embryos of hens supported on 25-hydroxyvitamin D3 or 24,24-difluoro-25-hydroxyvitamin D3.

L12 ANSWER 8 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1986:419063 CAPLUS
DN 105:19063
TI Study for measurement of calcium-regulating hormone in blood. III. Concentrations of calcium-regulating hormone and ionized calcium in T4 short-term treated rats
AU Fukunaga, Masao; Morita, Rikushi; Yamamoto, Itsuo; Torizuka, Kanji
CS Dep. Nucl. Med., Kawasaki Med. Sch., Kurashiki, Japan
SO Naika Hokan (1985), 32(9), 267-74
CODEN: NAHOAI; ISSN: 0021-4809
DT Journal
LA Japanese
AB To clarify the pathophysiol. of Ca metab. in T4 [51-48-9] short-term treated rats, Ca-regulating hormones and Ca were measured. In T4-treated rats, in addn. to hypocalcemia and **hyperphosphatemia**, low concns. of parathyroid hormone (PTH) [9002-64-6] and 1,25-dihydroxyvitamin D3 (1,25 (OH)2D) [**32222-06-3**] were obsd. Although the cause of the decreased PTH was unclear, **hyperphosphatemia** and low concn. of PTH might be lead to very prodn. of 1,25 (OH)2D. On the other hand, basal level of calcitonin (CT) [9007-12-9] was low, reflecting the hypocalcemia. However, CT showed the good response to Ca infusion. Under conditions of abnormal albumin concn., it was essential to measure Ca2+. Furthermore, to sep. the biol. fraction of Ca from total Ca, the careful estn. of P as well as the albumin level was required.

L12 ANSWER 9 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1985:503826 CAPLUS
DN 103:103826
TI Comparative study of the toxicity of 1.alpha.-hydroxyvitamin D3 and 24,25(RS)-dihydroxyvitamin D3 in rats
AU Khaidakov, M. S.; Alekseeva, I. A.; Belakovskii, M. S.; Blazheevich, N. V.; Spirichev, V. B.
CS Inst. Pitan., Moscow, USSR
SO Farmakol. Toksikol. (Moscow) (1985), 48(4), 106-9
CODEN: FATOAO; ISSN: 0014-8318
DT Journal
LA Russian
AB 1.alpha.-Hydroxyvitamin D3 (I) [**41294-56-8**] given to rats (230-260 g) at 0.25-25 .mu.g/day for 5 days led to hypercalcemia and **hyperphosphatemia**; 2.5 .mu.g I/day decreased the d. of osseous tissues, and 25 .mu.g I/day led to a high mortality and accumulation of Ca by soft tissues. On the contrary, 24,25-dihydrovitamin D3 (II) [40013-87-4], even in a high dose (25 .mu.g), did not exert any hypercalcemic or **hyperphosphatemic** actions but promoted decreases in the levels of blood Ca and P. It did not affect Ca accumulation by the bone and organ tissues. However, at 25 .mu.g/day, II inhibited growth. It is suggested that II should not exceed 10-fold the requirements (0.25 .mu.g/day) when given for short-term periods.

L12 ANSWER 10 OF 23 CAPLUS COPYRIGHT 1995 ACS

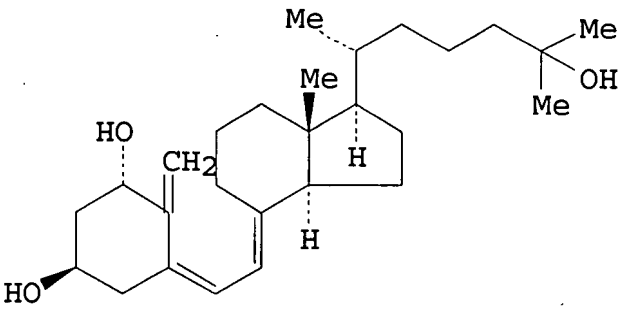
AN 1984:544800 CAPLUS
DN 101:144800
TI Effect of 24,25-dihydroxycholecalciferol on calcium-phosphorus metabolism and osseous tissue in rats with experimental renal failure
AU Alekseeva, I. A.
CS Inst. Pitan., Moscow, USSR
SO Vopr. Pitan. (1984), (3), 55-8
CODEN: VPITAR; ISSN: 0042-8833
DT Journal
LA Russian
AB Exptl. chronic renal failure in rats was assocd. with azotemia, **hyperphosphatemia**, a decrease in the proportion of diaphysis in the femur, and decreases in diaphyseal Ca, P, and hydroxyproline [51-35-4] and in epiphyseal Ca. 24,25-Dihydroxycholecalciferol (I) [40013-87-4] (0.25 .mu.g/day) administered to these rats increased the proportion of diaphysis and diaphyseal Ca and P and decreased the extent of azotemia and **hyperphosphatemia**. Furthermore, I raised the collagen content in diaphyses and epiphyses. A higher I dose (1.25 .mu.g) was not more effective. In neither the low nor high dose did I produce hypercalcemia or calcinosis. 1,25-Dihydroxycholecalciferol (II) [**32222-06-3**] (0.025 .mu.g/day) administered to rats with chronic renal failure enhanced the degree of **hyperphosphatemia** and epiphyseal demineralization, provoked moderate hypercalcemia, and enhanced calcinosis in the aorta and remainder of the kidneys. A combination of II (0.025 .mu.g) and I (1.25 .mu.g) slightly decreased the hypercalcemia-, **hyperphosphatemia**-, and calcinosis-inducing effects of II, completely prevented osteoporic alterations in the diaphysis, but enhanced epiphyseal demineralization. Thus, decreasing the doses of these metabolites during combined use was recommended. I is a more effective and safer agent for treating Ca-P metab. disorders and lesions in chronic renal failure than is II.

L12 ANSWER 11 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1984:504869 CAPLUS
DN 101:104869
TI Effects of 1,25-dihydroxycholecalciferol on phosphate transport in vitamin D-deprived rats
AU Kurnik, Brenda R. C.; Hruska, Keith A.
CS Dep. Med., Jew. Hosp., St. Louis, MO, 63110, USA
SO Am. J. Physiol. (1984), 247(1, Pt. 2), F177-F184
CODEN: AJPHAP; ISSN: 0002-9513
DT Journal
LA English
AB Partially vitamin D-depleted (PVDD) rats had increased phosphate excretion, both abs. and fractional, and a decrease in Na+ gradient-dependent inorg. phosphate (Pi) transport in proximal tubular brush border membrane vesicles (BBMV) prepd. from their kidneys. Vitamin D repletion of PVDD rats with 1,25-dihydroxyvitamin D3 (1,25(OH)2D3) [**32222-06-3**] (15 pmol/100 g) decreased fractional excretion of Pi from 22.6 to 13.5%; the latter values were similar to normal rats. Repletion with 1,25(OH)2D3 also increased Na+-dependent phosphate transport in BBMV from 322 pmol/mg protein/15 s in BBMV from PVDD rats to 698 pmol/mg/protein/15 s. Repletion with larger doses of 1,25(OH)2D3 produced hypercalcemia and **hyperphosphatemia** from

intestinal absorption, and increases in phosphate excretion, and a blunted response of Pi transport to 1,25(OH)2D3. Prevention of **hyperphosphatemia** by dietary adjustments allowed full expression of the stimulatory effects of 1,25(OH)2D3 on Pi transport. This may partially explain the inhibitory effects reported in prior studies in which plasma Pi was not controlled and the larger doses of 1,25(OH)2D3 administered. Apparently, vitamin D depletion is assocd. with decreased Pi transport by the kidney that is rapidly cor. by physiol. amts. of 1,25(OH)2D3. The stimulatory effect of 1,25(OH)2D3 on Pi transport is manifest in the brush border membrane of renal proximal tubular cells at the level of the Na+-dependent active transport mechanism.

L12 ANSWER 12 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1984:489421 CAPLUS
DN 101:89421
TI Effect of various vitamin D analogs on plasma calcium and phosphorus and intestinal calcium absorption in fed and unfed American eels, Anguilla rostrata
AU Fenwick, J. C.; Smith, K.; Smith, J.; Flik, G.
CS Dep. Biol., Univ. Ottawa, Ottawa, ON, K1N 6N5, Can.
SO Gen. Comp. Endocrinol. (1984), 55(3), 398-404
CODEN: GCENA5; ISSN: 0016-6480
DT Journal
LA English
AB Injection of .apprx.1 ng/g body wt./day of ether vitamin D3 [67-97-0] or 1,25-(OH)2-vitamin D3 [**32222-06-3**] for 7 days induced hypercalcemia and **hyperphosphatemia** in fed American eels, but only **hyperphosphatemia** in unfed eels. These same analogs also stimulated the uptake of 45Ca from intestinal sacs in situ. The vitamin D3 appeared to be relatively more effective than the 1,25-(OH)2D3 metabolite and chlorpromazine inhibited the effect of vitamin D3 on intestinal Ca uptake. 7-Dehydrocholesterol, vitamin D2, and 24,25-(OH)2D3 did not stimulate hypercalcemia, **hyperphosphatemia**, or intestinal Ca uptake.

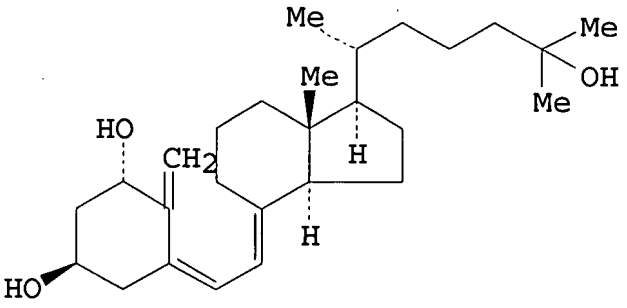
L12 ANSWER 13 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1983:483091 CAPLUS
DN 99:83091
TI A study of the control mechanism of materno-fetal calcium homeostasis with emphasis on the vitamin D3 metabolite dynamics
AU Honda, Toshie
CS Sch. Med., Nihon Univ., Tokyo, 101, Japan
SO Nichidai Igaku Zasshi (1983), 42(5), 515-27
CODEN: NICHAS; ISSN: 0029-0424
DT Journal
LA Japanese
GI



I

AB Mineral homeostasis during pregnancy was examd. by measuring minerals, hormones, and vitamin D metabolites in blood of the maternal peripheral vein, and umbilical arterial and venous blood. In the maternal peripheral blood, Ca decreased throughout pregnancy, inorg. phosphate increased near term, and Mg showed no significant variation. The fetus in the 2nd trimester was hypocalcemic, **hyperphosphatemic**, and hypermagnesemic, but near term the fetus was hypercalcemic,-phosphatemic, and -magnesemic. Calcitonin [9007-12-9] increased gradually with the course of pregnancy, in both the maternal and fetal blood. Parathyroid hormone [9002-64-6] in the maternal blood increased throughout pregnancy, but remained below detectable levels in the umbilical blood. In the maternal blood, 25-hydroxyvitamin D3 (I) [19356-17-3] and 24,25-dihydroxyvitamin D3 (II) [40013-87-4] showed no significant variation during pregnancy, whereas 1.alpha.,25-dihydroxyvitamin D3 (III) [**32222-06-3**] increased gradually during the course of pregnancy, and the concn. of III was higher than that in the umbilical blood. In the umbilical blood, I increased slightly near term, and its concn. was higher in the umbilical vein than in the umbilical artery. Concns. of II and III, esp. the latter, were higher in the umbilical artery than in the umbilical vein.

L12 ANSWER 14 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1982:557183 CAPLUS
DN 97:157183
TI Role of fetal kidneys in calcium homeostasis in utero
AU Moore, E. S.; Langman, C. B.; Favus, M. J.; Ocampo, M.; Loghman-Adham, M.; Coe, F. L.
CS Med. Cent., Michael Reese Hosp., Chicago, IL, 60616, USA
SO Proc. Workshop Vitam. D (1982), 5th(Vitam. D: Chem., Biochem. Clin. Endocrinol. Calcium Metab.), 699-701
CODEN: PWVDDU; ISSN: 0721-7110
DT Journal
LA English
GI



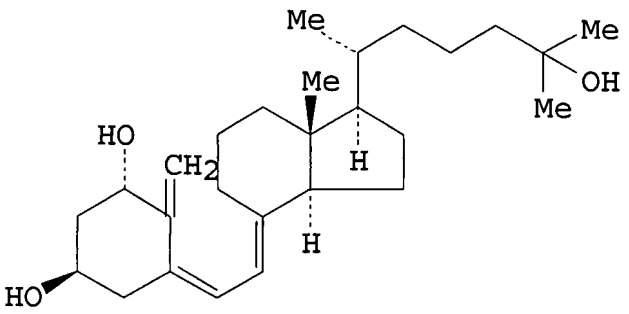
I

AB Bilateral nephrectomy of fetal lambs in utero resulted in hypocalcemia, **hyperphosphatemia**, and increased parathormone [9002-64-6] secretion. Administration of 1,25-dihydroxyvitamin D3 (I) [**32222-06-3**] to the fetus cor. the fetal hypocalcemia and caused a further increase in **hyperphosphatemia**. Ureteral severence had no effect on fetal serum Ca or phosphate or on parathormone secretion. Evidently, transfer of Ca from mother to fetus depends on I formation by fetal kidney.

L12 ANSWER 15 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1982:454412 CAPLUS
DN 97:54412
TI Effect of 1.alpha.-hydroxycholecalciferol and varying phosphorus content in the diet on phosphorus-calcium metabolism in hypokinetic rats
AU Blazheevich, N. V.; Spirichev, V. B.; Ushakov, A. S.; Belakovskii, M. S.; Pozdnyakov, A. L.; Sergeev, I. N.
CS USSR
SO Kosm. Biol. Aviakosm. Med. (1982), 16(2), 34-40
CODEN: KBAMAJ
DT Journal
LA Russian
AB The exposure of rats to hypokinesia and a P-enriched diet (Ca:P = 1:3) was accompanied by hypocalcemia, **hyperphosphatemia**, Ca losses from bones and formation of calculi in the kidneys. The decrease of the P content in the diet (Ca:P= 1:0.5-1:1) prevented these disorders. The administration of 1.alpha.-hydroxycholecalciferol (1.alpha.OHD3) [**41294-56-8**] at 0.025 .mu.g/day arrested hypokinesia-assocd. hypocalcemia and bone changes. The administration of 1.alpha.OHD3 together with a high P level enhanced nephrolithiasis and induced aortal calcinosis in the hypokinetic rats. These data indicate that P consumption should be reduced in order to prevent disorders in P-Ca metab. during hypokinesia. Administration of 1.alpha.OHD3 may be hazardous in case of excessive P consumption.

L12 ANSWER 16 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1982:401187 CAPLUS
DN 97:1187
TI Factors affecting the secretion of phosphate in parotid saliva in the sheep and goat
AU Manas-Almendros, M.; Ross, R.; Care, A. D.
CS Dep. Anim. Physiol. Nutr., Univ. Leeds, Leeds, LS2 9JT, UK

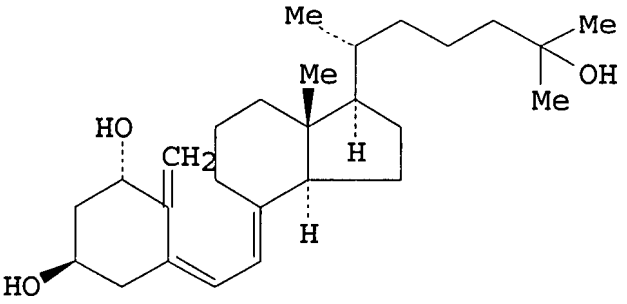
SO Q. J. Exp. Physiol. (1982), 67(2), 269-80
CODEN: QJEPD3
DT Journal
LA English
GI



I

AB The relation between the concn. of phosphate in plasma and parotid saliva was studied in conscious sheep and a goat, either intact or thyroparathyroidectomized (txptx), under conditions designed to minimize marked fluctuations in flow rate of saliva. A linear relation between acutely induced changes in plasma phosphate concn. and the phosphate level in saliva was demonstrated in both intact and txptx animals. Dietary P depletion caused adaptation of salivary phosphate concn. so that less was secreted at a given concn. of plasma phosphate. parathyroid hormone (PTH) [9002-64-6] decreased salivary phosphate concn. with little or no effect on phosphatemia. The administration of 1,25-dihydroxycholecalciferol (I) [**32222-06-3**] also decreased salivary phosphate concn. despite **hyperphosphatemia** and hypercalcemia. Probably salivary phosphate concn. can be influenced directly by the concurrent level of plasma phosphate, but this relation can be modified directly by the circulating concn. of I and indirectly by PTH via increased prodn. of I.

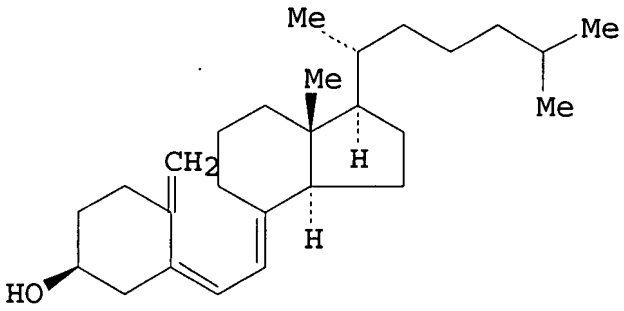
L12 ANSWER 17 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1982:46754 CAPLUS
DN 96:46754
TI Fetal growth and 1,25-dihydroxyvitamin D3 injections into thyroparathyroidectomized pregnant rats
AU Garel, J. M.; Gilbert, M.; Besnard, P.
CS Univ. Pierre-et-Marie-Curie, Paris, 75230, Fr.
SO Reprod., Nutr., Dev. (1981), 21(6A), 961-8
CODEN: RNDED4
DT Journal
LA English
GI



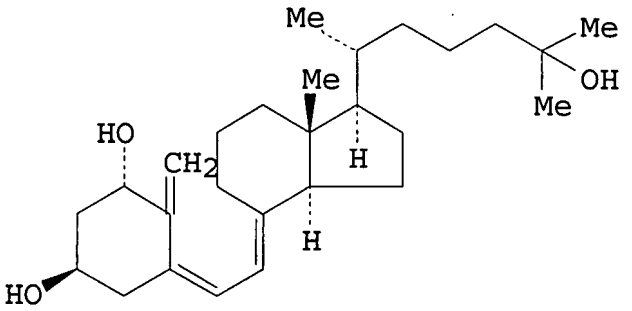
I

AB Thyroparathyroidectomy (TPTX) in rats on day 12.5 of gestation was assocd. with a progressive redn. of dietary intake between days 18 and 21 of gestation. In control mothers with a similar dietary restriction, the fetal plasma Ca and phosphate levels were unchanged, and a slight decrease in fetal wt. (.apprx.0.8 g) was obsd. at term. Maternal hypocalcemia in TPTX animals induced chronic fetal hypocalcemia beginning at day 18.5 of gestation; fetal **hyperphosphatemia** was only significant on the last day of gestation. Wt., blood glucose, and liver glycogen [9005-79-2] stores, which were greatly decreased in fetuses from untreated TPTX mothers, increased after injection of 1,25-dihydroxyvitamin D3 (I) [**32222-06-3**] into TPTX mothers. A marked increase in fetal wt. occurred at term with doses ranging from 0.05 to 0.25 .mu.g/kg; higher doses (.gtoreq.0.5 .mu.g/kg) inhibited this improvement. Fetal blood glucose was normalized (.apprx.45-50 mg/100 mL) when TPTX mothers received 0.05 to 0.5 .mu.g/kg, but decreased with higher doses. The highest fetal liver glycogen store (80 mg/g) was achieved using 0.05 .mu.g of I/kg, this increment being progressively inhibited when larger doses were given. S.c. calcifications were obsd. in the fetuses of some litters after treatment of the TPTX mothers with 1 .mu.g of I.

L12 ANSWER 18 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1981:580994 CAPLUS
DN 95:180994
TI Short-term effects of vitamin D3 and 1,25-dihydroxyvitamin D3 on osteomalacia in uremic rats fed a low-calcium-low-phosphorus diet
AU Weisbrode, Steven E.
CS Dep. Vet. Pathobiol., Ohio State Univ., Columbus, OH, 43210, USA
SO Am. J. Pathol. (1981), 104(1), 35-40
CODEN: AJPAA4; ISSN: 0002-9440
DT Journal
LA English
GI



I

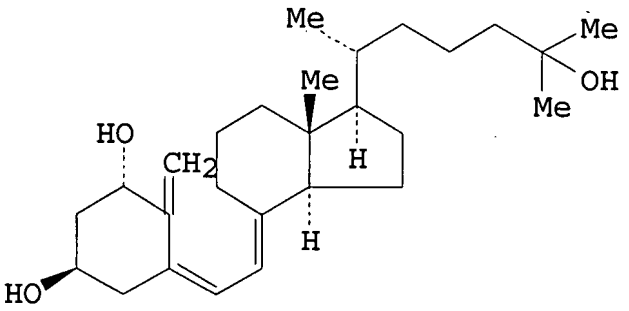


II

AB The histomorphol. of tibial metaphyses in uremic (5/6 nephrectomized [5/6 Nz]) rats fed a low-Ca-low-P (LCLP) diet was compared with sham-operated (SO) rats fed an LCLP diet and 5/6 Nx rats fed an LCLP diet and given 15,000 IU vitamin D3 (D3)(I) [67-97-0] or 5 units (135 ng) 1,25-dihydroxyvitamin D3 (1,25-(OH)2D3)(II) [**32222-06-3**] daily for 7 days. A marked osteomalacia characterized by an increased percentage of active and inactive trabecular osteoid surface and thickened growth plates developed in proximal tibial metaphyses in 5/6 Nx rats given the placebo, compared with SO rats. These bone changes were assocd. with relative hypophosphatemia, hypophosphaturia, and hypercalciuria in 5/6 Nx rats. In 5/6 Nx rats treated with D3 or 1,25-(OH)2D3 the growth plates had undergone mineralization and vascular invasion and were markedly reduced in thickness. Other parameters of osteomalacia in trabecular bone were not different from 5/6 Nx rats given the placebo. There was a significant decrease in osteoclasts/mm of trabecular surface perimeter in D3- and 1,25-(OH)2D3-treated rats. These bone changes were assocd. with hypercalcemia, **hyperphosphatemia**, and hyperphosphaturia, compared with 5/6 Nx rats given the placebo. Thus, in uremic rats fed the LCLP diet, short-term treatment with either pharmacol. levels of D3 or 1,25-(OH)2D3 cor. only lesions in the growth plate. Osteoid seams were not reduced in treated rats, although the serum calcium phosphorous product was elevated. The 5/6 Nx rat fed the LCLP diet appears to be a useful model for the rapid induction of uremic osteomalacia in adult animals.

L12 ANSWER 19 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1980:543587 CAPLUS
DN 93:143587
TI Paradoxical effect of 1,25-dihydroxycholecalciferol on osteoblastic and osteoclastic activity in the skeleton of the Eel Anguilla anguilla L

AU Lopez, E.; Mac Intyre, I.; Martelly, E.; Lallier, F.; Vidal, B.
CS Lab. Physiol. Gen. Comparee, CNRS, Paris, 75231/05, Fr.
SO Calcif. Tissue Int. (1980), 32(1), 83-7
CODEN: CTINDZ; ISSN: 0171-967X
DT Journal
LA English
GI



I

AB Sexual maturation in female eels induced a bone decalcification with hypercalcemia and **hyperphosphatemia**. Untreated eels showed marked osteoclastic resorption and osteocytic osteolysis and the degree of mineralization of the intercellular substance decreased. 1,25-Dihydroxycholecalciferol (I) [**32511-63-0**] (10 .mu.g) injected i.p. into mature female eels increased hypercalcemia and **hyperphosphatemia**; caused a major conversion of lining cells to osteoblasts and a stimulation of osteoblastic activity with new bone formation; and diminished osteoclastic resorption without changing osteocytic osteolysis or bone matrix mineralization.

L12 ANSWER 20 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1980:401198 CAPLUS
DN 93:1198
TI Inhibition by calcitonin of hypercalcemia induced by 1,25-dihydroxycholecalciferol
AU Barlet, J. P.
CS Inst. Natl. Rech. Agron. Theix, Beaumont, 63110, Fr.
SO J. Endocrinol. (1980), 85(1), 63-7
CODEN: JOENAK; ISSN: 0022-0795
DT Journal
LA English
AB In lambs, the hypercalcemic and **hyperphosphatemic** effects of 1.alpha.-hydroxycholecalciferol [**41294-56-8**] (0.1 .mu.g/kg, i.v.) were completely inhibited by calcitonin [9007-12-9] (5 units/kg, s.c., 4 times at 12 h intervals). Calcitonin also partially inhibited the hypercalcemic and hyperphospatemic effects of 0.25 .mu.g 1.alpha.-hydroxycholecalciferol/kg. In lactating cows, calcitonin prevented the hypercalcemia and **hyperphosphatemia** induced by 1,25-dihydroxycholecalciferol (I) [**32222-06-3**] (0.01 .mu.g/kg, i.v.). High levels of calcitonin can apparently inhibit the hypercalcemic and **hyperphosphatemic** effects of I in ruminants. Thus, hypocalcemia may occur in parturient cows despite raised concns. of I in blood plasma.

on intestinal Ca transport. However the hypercalcemic effect of SM was preserved whereas that of I was abolished. Prednisolone treatment to vitamin D-deficient rats produced a decrease of serum P and inhibited the **hyperphosphatemic** effect of all vitamin D derivs. The calcinogenic factor of SM is apparently not identical to I and is not therefore rapidly degraded in the intestinal cells as I.

L12 ANSWER 23 OF 23 CAPLUS COPYRIGHT 1995 ACS
AN 1976:538024 CAPLUS
DN 85:138024
TI The vitamin D3 metabolite-type activity of Solanum malacoxylon
AU Basudde, C. D. K.; Humphreys, D. J.
CS Physiol. Chem. Dep., R. Vet. Coll., London, Engl.
SO Clin. Endocrinol. (Oxford) (1976), 5, Suppl.(Mol. Endocrinol., Proc. Endocrinol., 1975), 109-19
CODEN: CLECAP
DT Journal
LA English
AB Administration of an aq. ext. of the dried leaves of S. malacoxylon (DLSM) to rats caused a rapid **hyperphosphatemia** and a decrease in plasma alk. phosphatase [9001-78-9] activity, the 2 effects being typical of 1,25(OH)2D3 [**32511-63-0**], the hormonally active metabolite of vitamin D3. DLSM, like both vitamin D3 and parathyroid hormone, increased plasma Ca and citrate [77-92-9] levels in rats. There was a decrease of plasma and urine Mg2+ levels similar to that produced by hypervitaminosis D3. Prolonged administration of DLSM to vitamin D deficient rats caused a polyuria, hypercalciuria, hyperphosphaturia, hypermagnesuria, an increase in urinary total hydroxyproline [51-35-4], an increase in plasma total hexosamines, and a corresponding decrease in the bone total hexosamines. These effects, some of which can also be produced by hyperparathyroidism, or following the administration of parathyroid ext., large doses of vitamin D3, or 1,25(OH)2D3, suggest that DLSM, like the latter compds., is capable of causing bone mineral mobilization, and the dissoln. of bone org. matrix.

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=> d his l8

     (FILE 'CAPLUS' ENTERED AT 12:57:59 ON 13 DEC 95)
L8         8001 S L7

=> d his l8-

     (FILE 'CAPLUS' ENTERED AT 12:57:59 ON 13 DEC 95)
L8         8001 S L7
L9          319 S HYPERPHOSPHATEM?
L10           0 S HYPER PHOSPHATEM?
L11          43 S L8 AND L9
L12          23 S L8(L)L9
L13           1 S L8(L)L9/OBI
L14           5 S L8/OBI AND L9/OBI
L15          21 S L12 NOT L14

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L14  ANSWER 1 OF 5  CAPLUS  COPYRIGHT 1995 ACS
AN   1993:78624  CAPLUS
DN   118:78624
TI   Chronic respiratory alkalosis induces renal PTH-resistance,
   hyperphosphatemia and hypocalcemia in humans
AU   Krapf, Reto; Jaeger, Philippe; Hulter, Henry N.
CS   Dep. Med., Insel Univ. Hosp., Bern, Switz.
SO   Kidney Int. (1992), 42(3), 727-34
     CODEN: KDYIA5; ISSN: 0085-2538
DT   Journal
LA   English
AB   Chronic respiratory alkalosis induces renal hyperphosphatemia and
     hypocalcemia in humans.  The effects of chronic respiratory
     alkalosis on divalent ion homeostasis have not been reported in any
     species.  The authors studied four normal male subjects during a
     four-day control period (residence at 500 m), during six days of
     chronic respiratory alkalosis induced by hypobaric hypoxia
     (residence at 3450 m), followed by a six-day eucapnic recovery
     period (500 m) under metabolic balance conditions.  Chronic
     respiratory alkalosis (.DELTA.PaCO2, -8.4 mm Hg, .DELTA.[H+] - 3.2
     nmol/L) resulted in a sustained decrement in plasma ionized calcium
     concn. (.DELTA.[IoCa++]p, -0.10 mmol/L), and a sustained increment
     in plasma phosphate concn. (.DELTA.[PO4]p, +0.14 mmol/L,) assocd.
     with increased fractional excretion of Ca++ (+0.5%), decreased
     phosphate clearance (-6.1 mL/min) and decreased excretion of
     nephrogenous cAMP (-1.5 nmol/100 mL GFR).  Urinary phosphate
     excretion decreased by 15.4 mmol/24 h on day 1 of chronic
     respiratory alkalosis, but returned to control values by day 6
     despite hyperphosphatemia.  Serum intact [PTH] did not change.
     Sustained hypomagnesuria (-0.8 mmol/24 h) occurred during chronic
     respiratory alkalosis and was accounted for, at least in part, by
     decreased fractional excretion of Mg++ (-0.7%) in the absence of
     change in plasma magnesium concn.  Serum 1,25(OH)2D levels were
     unchanged by chronic respiratory alkalosis.  In conclusion, the
     decrease in nephrogenous cAMP generation despite unchanged serum
     intact PTH concn. suggests that chronic respiratory alkalosis
     results in impaired renal responsiveness to PTH as manifested by
     alterations in PTH-dependent renal calcium and phosphate transport.
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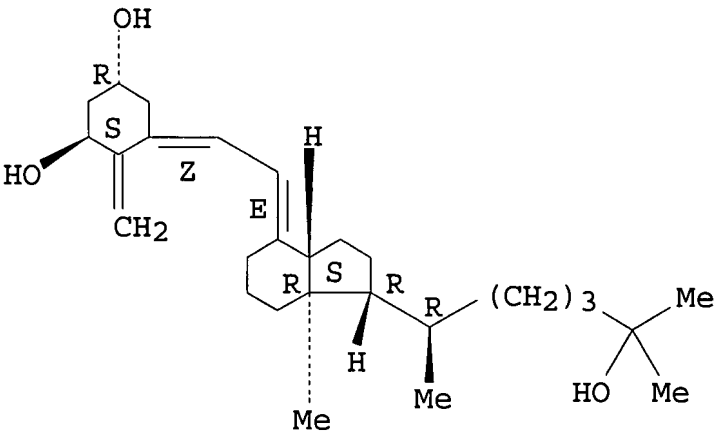
Hypomagnesuria in chronic respiratory alkalosis may be due, at least in part, to hypocalcemia-induced enhancement of renal magnesium reabsorption. The failure of [PTH] to increase during hypocalcemia may reflect defective PTH secretion.

IT **32222-06-3**, 1,25-Dihydroxycholecalciferol
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(metab. of, in human respiratory alkalosis, **hyperphosphatemia** and hypocalcemia in relation to)

RN 32222-06-3 CAPLUS
CN 9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, (1.alpha.,3.beta.,5Z,7E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



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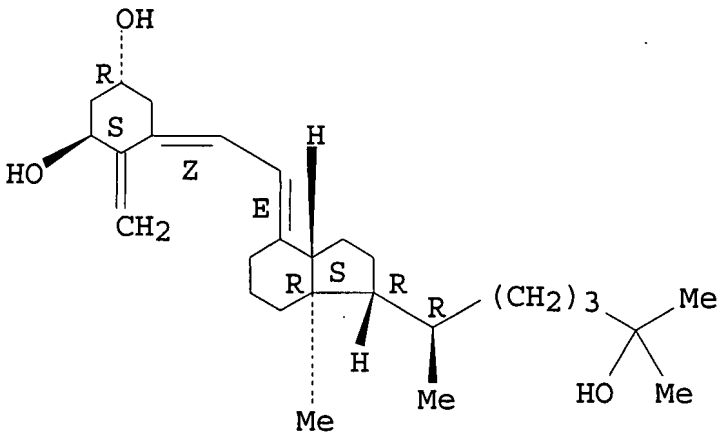
L14 ANSWER 2 OF 5 CAPLUS COPYRIGHT 1995 ACS
AN 1991:631024 CAPLUS
DN 115:231024
TI Dose-dependent vitamin D3 and 1,25-dihydroxyvitamin D3-induced hypercalcemia and **hyperphosphatemia** in male cyprinoid Cyprinus carpio
AU Swarup, Krishna; Das, Vijai K.; Norman, Anthony W.
CS Natl. Acad. Sci., Allahabad, 211 002, India
SO Comp. Biochem. Physiol., A: Comp. Physiol. (1991), 100A(2), 445-7
CODEN: CBPAB5; ISSN: 0300-9629
DT Journal
LA English
AB Vitamin D3 (10 IU and 100 IU/100 g) and 1,25-dihydroxyvitamin D3 (0.5, 5 and 50 U) were administered daily to unfed male carp Cyprinus carpio for 10 days. The serum Ca and inorg. phosphate levels were measured colorimetrically. Serum Ca increased in all treated groups; this increase was dose-dependent. Serum inorg. phosphate was elevated in the treated groups on days 3 and 5.
IT **32222-06-3**
RL: BIOL (Biological study)
(calcium and phosphate in blood serum of carp response to)
RN 32222-06-3 CAPLUS
CN 9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, (1.alpha.,3.beta.,5Z,7E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



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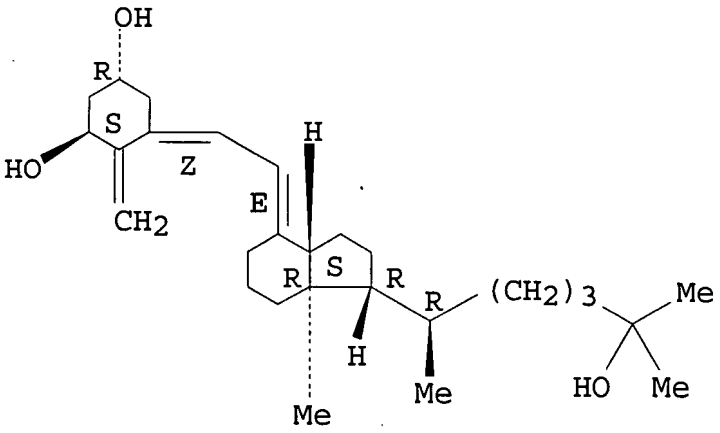
L14 ANSWER 3 OF 5 CAPLUS COPYRIGHT 1995 ACS
AN 1984:544800 CAPLUS
DN 101:144800
TI Effect of 24,25-dihydroxycholecalciferol on calcium-phosphorus metabolism and osseous tissue in rats with experimental renal failure
AU Alekseeva, I. A.
CS Inst. Pitan., Moscow, USSR
SO Vopr. Pitan. (1984), (3), 55-8
CODEN: VPITAR; ISSN: 0042-8833
DT Journal
LA Russian
AB Exptl. chronic renal failure in rats was assocd. with azotemia, hyperphosphatemia, a decrease in the proportion of diaphysis in the femur, and decreases in diaphyseal Ca, P, and hydroxyproline [51-35-4] and in epiphyseal Ca. 24,25-Dihydroxycholecalciferol (I) [40013-87-4] (0.25 .mu.g/day) administered to these rats increased the proportion of diaphysis and diaphyseal Ca and P and decreased the extent of azotemia and hyperphosphatemia. Furthermore, I raised the collagen content in diaphyses and epiphyses. A higher I dose (1.25 .mu.g) was not more effective. In neither the low nor high dose did I produce hypercalcemia or calcinosis. 1,25-Dihydroxycholecalciferol (II) [**32222-06-3**] (0.025 .mu.g/day) administered to rats with chronic renal failure enhanced the degree of hyperphosphatemia and epiphyseal demineralization, provoked moderate hypercalcemia, and enhanced calcinosis in the aorta and remainder of the kidneys. A combination of II (0.025 .mu.g) and I (1.25 .mu.g) slightly decreased the hypercalcemia-, hyperphosphatemia-, and calcinosis-inducing effects of II, completely prevented osteoporic alterations in the diaphysis, but enhanced epiphyseal demineralization. Thus, decreasing the doses of these metabolites during combined use was recommended. I is a more effective and safer agent for treating Ca-P metab. disorders and lesions in chronic renal failure than is II.
IT **32222-06-3**
RL: BIOL (Biological study)
(bone lesions and calcium-phosphorus metab. disorders response to, in kidney failure)
RN 32222-06-3 CAPLUS
CN 9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, (1.alpha.,3.beta.,5Z,7E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.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CH2
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S
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(CH2)3
Me
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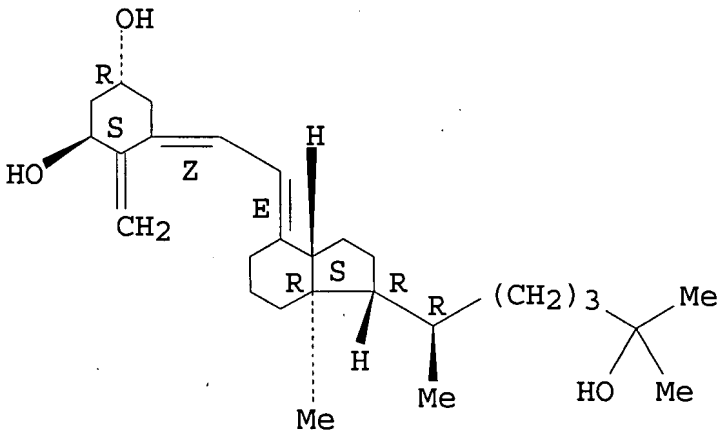
Me
HO
Me
Me

=> d l14 bib abs hitstr 4

L14 ANSWER 4 OF 5 CAPLUS COPYRIGHT 1995 ACS
AN 1984:527697 CAPLUS
DN 101:127697
TI Dose-dependent vitamin D3 and 1,25-dihydroxyvitamin D3-induced hypercalcemia and **hyperphosphatemia** in male catfish Clarias batrachus
AU Swarup, Krishna; Norman, Anthony W.; Srivastav, Ajai K.; Srivastav, Shyam Prakash
CS Dep. Zool., Univ. Gorakhpur, Gorakhpur, 273001, India
SO Comp. Biochem. Physiol., B: Comp. Biochem. (1984), 78B(3), 553-5
CODEN: CBPBB8; ISSN: 0305-0491
DT Journal
LA English
AB Vitamin D3 (5000 IU and 100 IU/100 g) and 1,25-dihydroxycholecalciferol (0.5 unit, 5 units, and 500 units/100 g) were administered daily to the male catfish, C. batrachus for 17 days. The serum Ca and phosphate levels were measured colorimetrically. Serum Ca level increased in all the treated groups and the increase was dose dependent. Serum phosphate was elevated in the treated groups (except in the group receiving only 100 units vitamin D3/100 g. Thus, both vitamin D3 and its hormonally active form are involved in calcium and phosphate metab. in the freshwater catfish.
IT **32222-06-3**
RL: BIOL (Biological study)
(calcium and phosphate of blood serum response to, in male catfish)
RN 32222-06-3 CAPLUS
CN 9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, (1.alpha.,3.beta.,5Z,7E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



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L14 ANSWER 5 OF 5 CAPLUS COPYRIGHT 1995 ACS
AN 1977:598608 CAPLUS
DN 87:198608
TI Impaired 1,25-dihydroxyvitamin D3 production in uremia in the absence of **hyperphosphatemia** or kidney damage
AU Van Stone, John C.
CS Harry S. Truman Mem. Veterans Hosp., Univ. Missouri Med. Sch., Columbia, Mo., USA
SO Vitam. D: Biochem., Chem. Clin. Aspects Relat. Calcium Metab., Proc. Workshop Vitam. D, 3rd (1977), 723-5. Editor(s): Norman, Anthony W.; Schaefer, K.; Coburn, J. W. Publisher: de Gruyter, Berlin, Ger.
CODEN: 36PEA2
DT Conference
LA English
AB Exptl. uremia in rats caused a decrease in the prodn. of 1,25-dihydroxyvitamin D3. This decrease occurred in the absence of hyperphosphatemia or structural changes in the renal parenchyma.
IT **32511-63-0**
RL: FORM (Formation, nonpreparative)
(formation of, in uremia, phosphate and renal damage in relation to)
RN 32511-63-0 CAPLUS
CN 9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, (3.beta.,5Z,7E)-(9CI) (CA INDEX NAME)